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MYCOLOGICAL BULLETIN

No. 45

W. A. Kellerman, Ph. D., Ohio State University

Columbus, Ohio, November 1, 1905

A BACTERIA NUMBER—Though these plants would not be called Mushrooms or Toadstools, the Bacteria are fungi and very interesting besides. The group is very large and only a few species are pathogenic—that is, disease-producing. The great majority are harmless to man, but that is telling only half the truth; they are in fact directly or indirectly most beneficial to us. In the Economy of Nature their role is most significant because they disintegrate organic matter and hand back the elements to the mineral kingdom; they prepare the bountiful supply of plant food—thus indirectly making our existence possible. But no space can here be spared to discuss these important organisms or to describe their life cycle. Suffice it to add that many if not most plant diseases are caused by Bacteria. The important publication mentioned in the next number has suggested that this matter be taken up incidentally and some illustrations furnished.

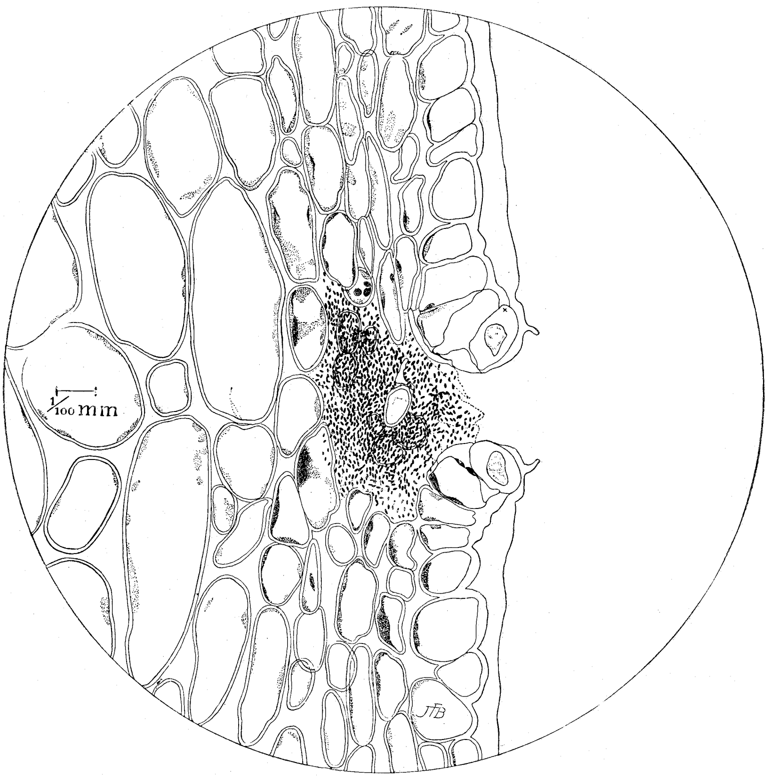

Fig. 144. BAC-TE′-RI-UM PRU′-NI—This is the earliest stage of fruit spot on green plums. The bacteria have entered through the stomate as the section of the fruit highly magnified shows. From Erwin F. Smith's Bacteria in Relation to Plant Diseases.

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LIST OF MUSHROOM KEYS.

This list includes the commoner accessible keys which beginners, amateurs and students of Mushrooms will ordinarily desire to use. It includes practically all of the conspicuous fungi—at any rate those which are generally spoken of as Mushrooms.

- Amanita.
  - Lloyd; Volvae of U. S. 3, 4, 5, 6. 1898.
  - McIlvaine; One Thousand American Fungi, 6. 1900.
  - Morgan; Journal of Mycology, 3:25. March 1887.
  - Peck; Rep. N. Y. State Mus. 23:68, 1873; 33:40-1, 1880; 48:310, 1895.
- Amanitopsis.
  - Beardslee; Notes on the Amanitas of So. Appalachians. Part I. Lloyd Library, Sept. 1902.
  - Lloyd; Volvae of the U. S., 8, 9. 1895.
- Agaricaceae (Genara).
  - Atkinson; Mushrooms, Edible, Poisonous, etc., 308.
  - Nina L. Marshall; Mushroom Book, 32, 1901.
  - Underwood; Moulds, Mildews and Mushrooms, 1899.
  - (Genera). White; Conn. Geol. & Nat. Surv. Bull., 3:17, 1905.
- Agaricales (Families).
  - Nina L. Marshall; Mushroom Book, 30, 1901.
  - Underwood; Moulds, Mildews and Mushrooms, 98, 1899.
- Agaricineae (Sections).
  - Peck; Rep. N. Y. State Mus., 48:231, 1895.
- Agaricini (Genera).
  - Morgan; Jour. Cin. Soc. Nat. Hist., 6:55, 1883.
  - Peck; Rep. N. Y. State Mus., 23:67, 1873.
- Agaricus.
  - (Natural tribes). Lloyd sec W. G. Smith; Volvae of the U. S., 19.
  - McIlvaine; One Thousand American Fungi, 332, 1900.
  - Peck; Rep. N. Y. State Mus., 48:231., 1895.
- Armillaria.
  - (Tribes). McIlvaine; One Thousand Am. Fungi, 52, 1900.
  - Peck; Rep. N. Y. State Mus., 43:41, 44, 1890.
- Ascomycetes.
  - (Orders). Nina L. Marshall; Mushroom Book, 18, 1901.
  - (Genera). Nina L. Marshall; Mushroom Book, 20, 1901.
  - (Orders). Underwood; Moulds, Mildews and Mushrooms, 35, 1899.
- Auriculariales (Families).
  - Underwood; Moulds, Mildews and Mushrooms, 94, 1899.
- Basidiomycetes (Orders).
  - Nina L. Marshall; Mushroom Book, 22, 1901.
  - Underwood; Moulds, Mildews and Mushrooms, 94, 1899.
- Black-spored Agarics [Melanosporae] (Genera). See Agaricaceae. Agaricini.
- Bolbitius (See Coprineae).
- Boletaceae (Genera).
  - Nina L. Marshall; Mushroom Book, 44, 102, 1901.
  - Peck; Bull. N. Y. State Mus., 2:74, Sept. 1889.
  - Underwood; Moulds, Mildews and Mushrooms, 106, 1899.
- Boletinus.
  - Nina L. Marshall; Mushroom Book, 103, 1901.
  - McIlvaine; One Thousand Am. Fungi, 398, 1900.
- Boletus.
  - McIlvaine; One Thousand Am. Fungi, 406, 421, 423, 430, 436, 438, 444, 453, 459, 466, 471, 1900.
  - (Tribes). McIlvaine; One Thousand Am. Fungi, 404, 1900.
  - Peck; Rep. N. Y. State Mus., 23:127, 1873; 37:58, 1884; 48:292, 1895. Bull. N. Y. State Mus., 1:58, May, 1887; 2:82, 83, 106, 114, 123, 131, 138, 145, 151, Sept, 1889.

CONTINUED IN NEXT NUMBER.

BACTERIA IN RELATION TO PLANT DISEASES.—This is the title of a work of 285 pages—the same (Volume I) being devoted to methods of work and literature. We show some of the illustrations by permission of the author; the electros were kindly placed at our disposal by the Carnegie Institution of Washington, taken from the work issued as their "Publication No. 27."

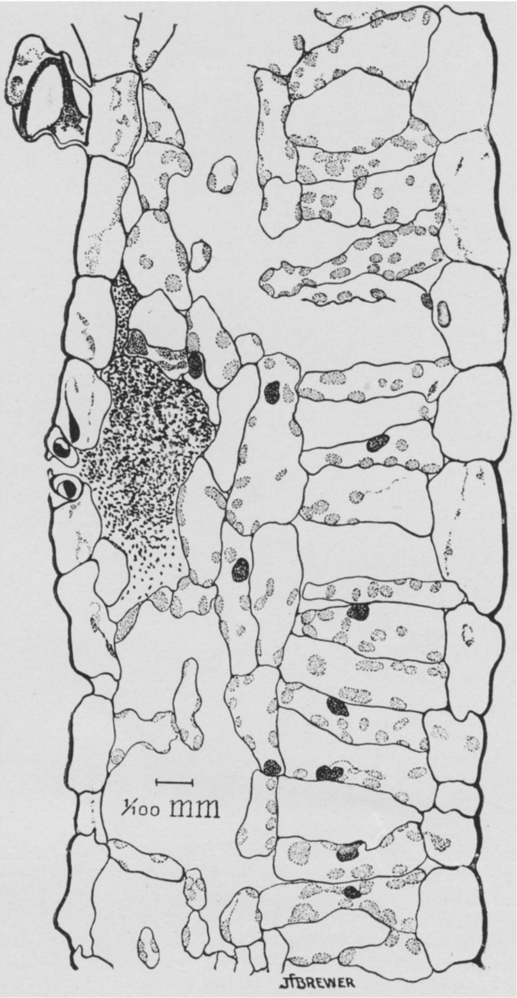

Fig. 145. BAC-TE'-RI-UM MAL-VA-CE-A-RUM—Early stage of infection through a stomate of a leaf of the Cotton plant. From Erwin F. Smith's Bacteria in Relation to Plant Diseases.

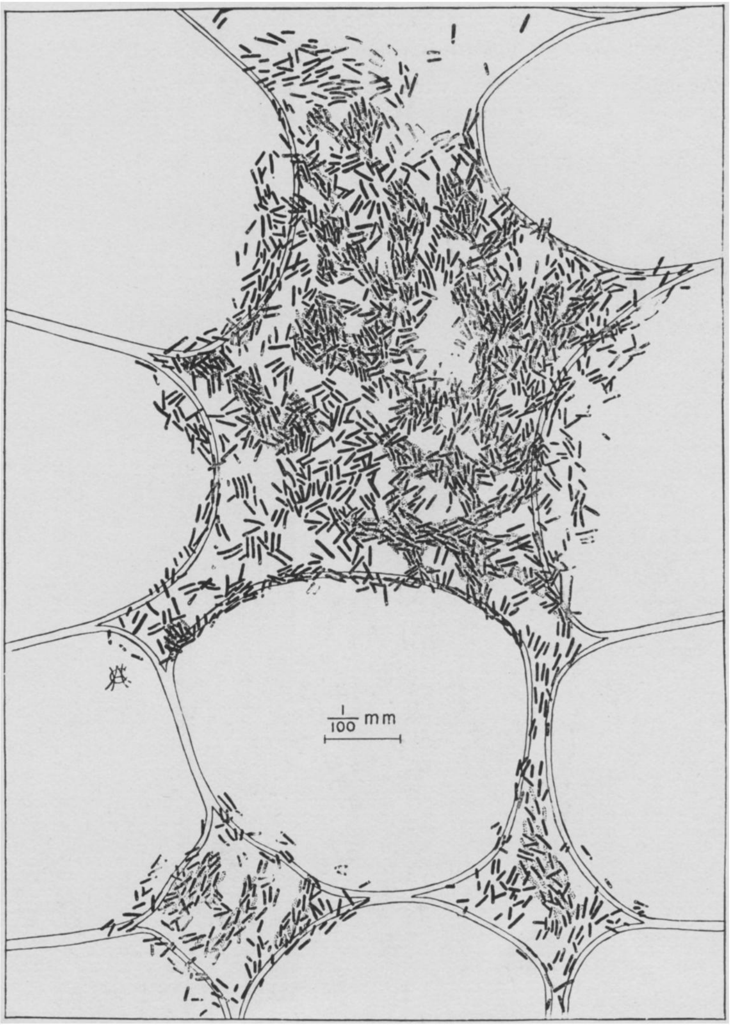

Fig. 146. Ba-cil′-lus ca-ro-to-vo′-rus—This shows the Bacteria between cells in the carrot, very highly magnified. From Erwin F. Smith's Bacteria in Relation to Plant Diseases.

To those not familiar with the classification of the Bacteria it may be said that there are several genera recognized by botanists. In a general way we may say the spherical forms are called *Micrococcus,* the oval or short forms are called *Bacterium*, the oblong or elongated forms are *Bacillus,* and the spiral forms belong to the genus *Spirillum.*

The Mycological Bulletin is issued on the 1st and 15th of each Month, Price 25c. Copies of Vol. II (1904) may be had for 50 cents each, or cloth bound copies for 75 cents. No copies remain of Vol. I (1903). Address, W. A. Kellerman Columbus Ohio.